China's corporate credit reporting system: A comparison with the United States and Germany

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Abstract

Corporate credit reporting (CCR), which aims at increasing trust in corporates, constitutes an intriguing, yet understudied set of regulatory institutions as it is both a regulatory object and subject at the same time. Differences in national CCR systems pose challenges for multinational companies and have increasingly become a subject of international conflicts on regulatory standards. In this context, the case of China deserves special attention since the country pursues both institutional divergence and convergence with international examples. Hence, the characterization of China's regulatory regime remains difficult. By comparing the institutional context of CCR in China to those in the United States and Germany, this paper sheds light on a specific aspect of China's complex regulatory regime. At the same time, it provides insights into the Chinese manifestation of CCR, which are important for the international business community.

Keywords: China, corporate credit reporting, regulatory governance, social credit system, transparency.

1. Introduction

In classical economic models, economic transactions depend only on demand and supply as actors in the market are supposed to have perfect information. In real markets, economic transactions are built upon trust, which actors develop based on available information. Usually, however, information is asymmetrically distributed between different economic actors. This can lead to adverse selection of business partners, moral hazards, and can ultimately hamper economic growth (Miller, 2003). To limit such market failures, societies have developed various trust-enhancing institutions and regulatory regimes over time. In a globalized world, different designs of these institutional settings and regulatory regimes can clash, coexist, or converge.

In this context, China is a particularly interesting case: Since the country embarked on its reform and opening journey in 1978, it has studied and adopted international experiences to build its socialist market economy without sacrificing the power of the state to steer economic development. In the past, China has repeatedly analyzed international approaches or followed foreign advice to mirror international institutions (e.g., Zhang et al., 2010). However, ever so often, the international community had to realize that the expected institutional mimicry produced institutions "with Chinese characteristics" instead. These particular institutional settings and the overall regulatory regime deserve attention because the Chinese government, which rules over one of the largest and

globally integrated economies in the world, explicitly strives to exert an influence on global standards and institutions (Weithmann, 2018).

This paper applies such scrutiny to a specific information-related regulatory institution: corporate credit reporting (CCR), a mechanism for reducing information asymmetries in the market by means of collecting, organizing, and providing credit information. Most of the research related to CCR conducted so far concentrates on the role of credit rating agencies (CRAs) in the political economy (e.g., Jiang & Packer, 2017; Partnoy, 2006; Voss, 2020). This also applies to China, where the research focus on CRAs resulted from explicit criticism of US-backed CRAs, which the Chinese government deems a tool of US power in global financial markets. China's creation of proprietary CRAs and a growing interest in China's credit bond market have contributed to the research bias (Helleiner & Wang, 2018; Kennedy, 2008).

Much less research attention has been given to the institutional aspects of CCR in general, or to how information is collected, organized, made transparent, and by whom. This is surprising, since CCR constitutes an intriguing part of political economies, being both a regulatory object and subject: On the one hand, CCR plays an important role in regulating corporations and business transactions across industries as well as in building economic trust. On the other hand, following financial scandals and crises, CCR itself has become a target of regulators across the globe.

This is especially relevant in the Chinese case, as the academic discourse has remained inconclusive in characterizing the nature of the Chinese regulatory regime (e.g., Hsueh, 2011; McNally, 2007; Pearson, 2005; Witt, 2010). Hsueh (2011) and McNally (2012), for example, suggest the coexistence of two regulatory patterns. On the one hand, the state has retained strong control in industries of strategic importance for China's development, for example via state ownership. On the other hand, in industries that are not vital to the country's strategic interests, the Chinese government steers from a distance, allowing private entrepreneurship and fierce market competition. Yet, these works have not taken recent regulatory developments in China into account, such as those related to CCR.

A major recent development affecting the Chinese CCR system is the social credit system (SCS, 社会信用体系), which emerged as a response to existing difficulties in regulatory enforcement and a lack of trust across society (e.g., Ye, 2015; Yu, 2016). So far, the importance of the SCS as part of the country's CCR system and the regulatory system has attracted little attention, as most scholars to this date have focused on the implications of the SCS for individuals (e.g., Dai, 2020; Raghunath, 2020), even though the corporate arm of the SCS is much further developed (Krause & Fischer, 2020).

By comparing the institutional context of CCR in China to those in the United States and Germany, this paper does not only shed light on the manifestations of CCR in different countries which are relevant for the international business community, but also provides insights into the complex nature of the Chinese regulatory regime, which may directly or indirectly influence international institutions and governance mechanisms. Therefore, the paper proceeds as follows: Section 2 introduces the conceptual framework for CCR adopted in this paper, which is followed by an explanation of our research methodology in Section 3. The findings from the comparison of the three country cases are presented in Section 4 along the dimensions of the CCR framework. Finally, Section 5 discusses the results and Section 6 highlights their relevance for the discourse about China's regulatory regime and the business community.

2. Conceptual framework

The understanding of CCR systems adopted in this paper is based on Miller's (2003, p. 27) definition of a credit reporting system as "the broader institutional framework for credit reporting in an economy." Hence, a CCR system refers to this broader institutional framework for the corporate sector. Based on Miller (2003), but tailored to the corporate sector, this institutional framework consists of six elements: cultural environment, CCR actors, legal environment, regulatory environment, use of information, and transparency. These six elements serve as the dimensions according to which the CCR systems in the three countries are compared in this paper.

Within the institutional framework of CCR, credit information can be defined broadly or narrowly on a continuum depending on the context. In a narrow sense, it consists of purely financial data; in a broad sense, it also includes further information (e.g., court judgments). The latter is often referred to as alternative or "social" credit

information. Typical outputs of CCR are credit reports, credit scores (evaluating the status quo), and credit ratings (predictions about future performance). In line with these CCR outputs, the roles of the major actors in CCR also differ from each other. A *credit information registry* provides "a database of information on borrowers in a financial system" (Miller, 2003, p. 27). This database forms the basis for the evaluation of historical credit information in the form of credit reports and credit scores. Depending on the country, such registries are public (*credit bureaus*) or private (*credit reporting firms*). Designated *credit rating agencies*, in contrast, issue credit ratings for both companies and countries. Such ratings are, for example, used in the bond/securities market for the evaluation of investment decisions (IOSCO, 2015).

3. Methodology

This paper employs an inductive qualitative comparative analysis (May, 2011). We selected the United States and Germany for comparison with China for two reasons. First, they are among the most well-established CCR systems and, thus, can serve as a benchmark for the study of the relatively new Chinese CCR system. Second, they represent two main types of existing CCR systems, the Anglo-American model and the continental European model (Jentzsch, 2006).

The paper investigates the differences between the systems along the six dimensions of the CCR system framework introduced above. The insights into the cultural environment, CCR actors, the legal and regulatory environments, as well as the use of information are based on an analysis of primary (government documents, media reports) and secondary sources (existing academic research).

The paper puts special emphasis on the dimension of transparency. For a more fine-grained analysis, this dimension is therefore broken down into the elements of disclosure, clarity, and accuracy (Schnackenberg & Tomlinson, 2016). *Disclosure* describes the amount and type of information that is shared (Pirson & Malhotra, 2011). In this context, information availability, accessibility, and visibility are important aspects to be evaluated (Kaptein, 2008). *Clarity* refers to the degree of difficulty with which the information can be understood by the receiver. Factors such as language and culture influence the clarity of information (Larsson et al., 1998). *Accuracy* is defined as the correctness and reliability of information (Dubbink et al., 2008). For the purpose of this paper, the evaluation of the transparency dimension compares features conducive to accuracy, such as publication dates for traceability of information and mechanisms to detect and correct wrong/missing information. In addition, the paper draws on secondary literature and media reports to evaluate accuracy, since the researchers have no means to access company-internal data necessary to check the correctness of information provided in the CCR systems.

To examine the transparency dimension, we conducted a comparative analysis of publicly available information about companies in the different CCR systems. For this purpose, one public and one private local corporate credit information registry (in the following, "public platform" and "private platform") were selected for each country. The platforms were selected based on two criteria: Platforms that, first, are most commonly used to retrieve company information and, second, cover the maximal number of companies in a given country. In the United States, the Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) is the only nationwide public platform disclosing corporate information on listed companies, which serves as a common reference point to retrieve company information, and Dun & Bradstreet (D&B) is the only private platform with a sole focus on corporate credit information provision. In Germany, we chose the company registry compiled by the Bundesanzeiger as the public platform, since it is the only public corporate credit registry providing information about all companies registered in Germany. Schufa is the biggest and most well-known local private platform for credit information. In China, Credit China (信用中国) serves as the public platform for the comparison. While the National Enterprise Credit Information Publicity System (NECIPS, 国家企业信用信息公示系统) acts as the most comprehensive and commonly used Chinese public CCR platform, this platform was offline and inaccessible from outside China during the data collection period for this paper (August 16 to September 7, 2020). When last compared via spot checks in November 2019 while one researcher was in China, however, Credit China provided the same information about companies as the NECIPS.[1] Therefore, the substitution of NECIPS with Credit China does not affect the comparison negatively. We chose Qichacha (企查查) as the private Chinese platform for the comparison, as it is one of the leading CCR platforms in China.

To evaluate the transparency levels of these platforms, we selected comparable companies from each country and extracted information about them provided on the platforms for comparison. The choice fell on large-scale listed companies since they are generally required to disclose the most information. We further narrowed the sample to companies solely listed on local stock exchanges to avoid distorted results due to disclosure requirements from other countries. Finally, we selected one company each from the primary (mining), secondary (automotive), and tertiary (IT) sectors for each country to account for potential differences between sectors. These industries are suitable because they are of national strategic importance to all three countries. Only for China does the sample contain two companies in each of the three sectors—one state-owned (SOE) and one privately owned enterprise (POE)—to capture potential reporting differences between ownership types. Altogether, the case study included a sample of 12 anonymized companies. While the small sample size of this qualitative, inductive approach does not allow generalizability, this exploratory research approach nevertheless helps to uncover phenomena, on the basis of which hypotheses can be established. Future research, for example, quantitative research with a larger sample size, should test these findings.

The case study comparison followed Ritchie and Spencer's (2002) qualitative framework analysis, as it is expedient for analyzing qualitative data systematically in teams and drawing comparisons. After the first researcher had identified the thematic framework for the first company case study, the other researchers tested and refined the framework by indexing and charting further cases. We improved the framework in four rounds, during which we merged previously identified categories and created new categories inductively from the data. The final framework contains 18 categories of information (Appendix II).

In the following, the elaborations regarding transparency concentrate on the country and platform comparison since the differences between POEs and SOEs and between sectors within the respective countries turned out to be negligible.

4. Results

4.1. Cultural environment

The cultural environment for CCR in China differs in two regards from the situations in the United States and Germany: the development path of the CCR market in the context of economic trust-building and the conceptualization of credit over time.

Both the United States and Germany possess a long history and culture of CCR, where the market for credit information developed in a bottom-up manner from economic needs (Berghoff, 2008). The two countries only differ with regard to the realms in which their institutional CCR framework emerged. CCR in the United States developed outside the existing institutional framework, that is, newly emerging and independent private actors took on the role of providing credit information to corporate actors as a reaction to high defaults on debt and a weak banking system at the time (Berghoff, 2008). In contrast, CCR in Germany originally developed within the existing institutional structures, where players in the financial sector, such as banks, chambers of commerce, and cooperatives, assumed the task of CCR (Berghoff, 2008). Since the creation of these early credit reporting formats, CCR has constituted a key element in economic trust-building in both economies.

Compared to the long history of CCR in these two countries, CCR is rather new to China: The corporate credit market only started to develop after the Chinese government initiated reform and opening up policies in the 1980s (Jentzsch, 2008). In this context, the People's Bank of China (PBoC, 人民银行) initiated CCR in a top-down approach to counter a loss in significance of assessing creditworthiness and establishing trust via *guanxi* (关系, reciprocal personal relationships) (Krause & Fischer, 2020). However, numerous business scandals in the 2000s and 2010s (e.g., the scandal about melamine-tainted milk powder in 2008) highlighted that the early initiatives by the PBoC to create structures of CCR were not sufficient to facilitate economic trust-building (Dong et al., 2018). Against this background, the Chinese government started to set up the SCS in 2014 as a new trust-building mechanism, which fostered the development of the credit service industry. This brief history of Chinese CCR shows that, similarly to the United States and Germany, the development of a CCR system in China addressed economic needs. Yet, China is the only country in the comparison where the development followed a strong top-down state impetus. Ever since, the Chinese state has maintained its authority over credit-related data throughout the establishment of the country's CCR system. In fact, the government has reinforced its power by

building central information databases that consolidate credit data from existing institutions in the context of the SCS (Meissner, 2017).

With regard to the conceptualization of credit within the respective CCR systems, the United States and Germany both transitioned from a broad concept of credit to a narrow one. Originally, credit and trust in the business context had a strong moralizing and educational nature. In the United States, the key criterion for evaluating corporate credit used to be a businessman's character, defined by the CCR firms' Christian value canon (Berghoff, 2008). Credit information was provided in the form of narrative reports that included marital relations and other personal information. In Germany, the notion of credit initially mirrored the understanding of social trust in local communities. Thus, sanctions as a response to deficiencies in credit went beyond financial measures to also include the publication of such information in the community as well as social pressure (Guinnane, 2001). Later, in a negotiation process between businesses and the government, the notion of trust and thus credit changed in both countries. With the intention to achieve morally neutral and less biased corporate credit evaluations, the concept of credit was reduced to the ostensibly objective financial notion applied today (Lipartito, 2013; Olegario, 2016). Therefore, both countries' current CCR systems and their definition of credit focus specifically on financial behavior.

The conceptualization of credit in China, on the other hand, has followed the opposite logic compared to the United States and Germany: The originally rather narrow notion of credit focusing on financial aspects has been extended to a broader understanding of it in the context of the SCS (Ye, 2015), where not only financial but also social behavior is evaluated. Credit is now more frequently associated with ethical ideals such as integrity (State Council China, 2014). This process of transition is still ongoing and became most obvious in a debate over the definition of credit between the PBoC and the National Development and Reform Commission (NDRC, 国家发展和改革委员会) (Caixin, 2020). As a result of this debate, an increasingly clear distinction between the main financial notion of credit (征信), driven by the PBoC, and a broader definition of credit including moral elements (信用), adopted by the NDRC, has emerged (Caixin, 2020). Hence, China's cultural environment for CCR is distinct from the situation in the United States and Germany.

4.2. CCR actors

With regard to the actors in the CCR markets in the United States, Germany, and China, the three countries occupy different positions on a continuum reaching from the dominance of private actors in the United States to an equal mix of public and private actors in Germany and the dominance of public actors in China.

The United States positions itself at one end of the continuum, where private actors in the CCR market play a dominant role. The US private CRAs gained status in 1975, when they were approved as Nationally Recognized Statistical Rating Organizations (NRSROs) by the SEC, leading to Moody's, Standard & Poor's, and Fitch's oligopolistic market position (Kennedy, 2008). Likewise, the biggest private CCR firms, D&B, Equifax, and Experian, hold a quasi-oligopolistic position in the CCR market. Besides these dominant actors, a few small private CCR firms exist in market niches (e.g., Cortera). Overall, the private CCR market in the United States has matured and become consolidated. Compared to these private actors, state-run registries play a far less dominant role. Moreover, the United States does not feature any comprehensive nationwide public credit registry for all companies. Instead, there are several registries on the national level for different company types, for example, EDGAR (run by the Securities Exchange Commission, SEC) for listed companies or the National Information Center (run by the Federal Reserve System, Fed) for banks and other institutions under Fed supervision. In addition to such national databases, there are also company registration databases on the local state level.

Compared to the United States, Germany features a rather balanced mix of public and private CCR actors. The two major public CCR actors in Germany are two public credit registries, the Bundesanzeiger, which provides information on every registered company in Germany and the Evidenzzentrale für Millionenkredite, a credit registry run by Bafin (the Federal Financial Supervisory Authority). The latter focuses on the finance sector and prospectuses, as well as loans above €1.5 million. Generally, public CCR actors are centrally organized and at times even integrated into CCR systems at the EU level (e.g., the registry for company insolvencies). Next to the public registries, private CCR actors play an equally important role within the German CCR market. Creditreform and Bürgel are established private credit reporting firms. In addition, Schufa, which initially focused on

credit reporting for individuals, has added credit ratings for firms to their repertoire since 2004. Furthermore, banks, which traditionally took on the task of credit rating, still dominate the market with their internal credit rating systems (Trampusch, 2014). Meanwhile, international CRAs, especially those from the United States, have entered the German market since the 2000s (Trampusch, 2014).

In contrast to Germany, the Chinese CCR system is heavily dominated by public players, especially with regard to data control. To date, the PBoC's Credit Reference Center (征信中心) dominates financial credit evaluations. In addition, several publicly run credit registries were set up in the context of the SCS: The National Credit Information Sharing Platform (全国信用信息共享平台) compiles company data from different administrative departments and levels across China. Part of this information is publicly accessible via the websites of the NECIPS and Credit China and their local, departmental, and sectoral sub-websites.

In comparison, private actors play a smaller role in the Chinese CCR system, arguably because the market is highly convoluted and less mature than in the United States and Germany. Notably, China possesses more CRAs than the United States, with many being state-backed. Nine major domestic CRAs have been accredited by the PBoC. Most of these CRAs originated within the Chinese government or are still majority state-owned (Lin & Milhaupt, 2017). In addition, one fully publicly owned CRA, the China Bond Rating Company (中债资信评估有限责任公司), several non-accredited CRAs in niches, and two international CRAs (Standard & Poor's and Fitch) are active on the Chinese market. Compared to the CRA market, the market for private credit reporting firms is even less consolidated. Around 130 such firms have been accredited by the PBoC, the most well-known examples being Qichacha and Tianyancha (天眼查) (PBoC, 2021).

4.3. Legal environment

While the legal frameworks related to CCR in the United States and Germany are rather mature, legislation in China is currently still under development. Nevertheless, four differences between China and the other two countries are already discernible. First, China's legal CCR environment is distinct in its aspiration to establish a dedicated and centralized legal framework for the whole national credit reporting system, which does not exist in the other two countries. The drafting process for a comprehensive credit reporting law, the Social Credit Law, has already been initiated (Trivium, 2019). Such a law would consolidate previously existing, but fragmented credit-related regulations, which address topics such as the establishment of the SCS (e.g., NDRC, 2018; NDRC & PBoC, 2017) and the functioning of local and sectoral SCS elements (e.g., regulations detailing criteria for public credit score generation; CSRC, 2017).

Second, China's legal framework regulates a broader range of topics compared to the United States and Germany. The legal frameworks for CCR in the latter two countries rely on two pillars. The first pillar, CRA regulation, existed in the United States and Germany prior to the global financial crisis in 2008/2009, but has become more stringent since, for example, via the *Dodd Frank Act* (2010) in the United States and the *EU CRA II* (2009/2013) in Germany. The second pillar, information disclosure, is also administered exhaustively in both countries, but related legal requirements are scattered across a broad spectrum of regulations. Examples in the United States are the *Sarbanes-Oxley Act* (2002), which regulates disclosure in the context of stock listings (for a comparison of the disclosure requirements for listed companies in the three countries, see Appendix I), the *Investment Company Act* (1940) for the investor–investee relationship, and the *Fair Credit Reporting Act* (1970) targeting credit reporting firms. In Germany, the *German Commercial Code* and the *Law on Electronic Commercial Registers, Cooperative Registers and the Company Register* (2007) prescribe disclosure requirements for all companies in the Bundesanzeiger, the *Securities Trading Act* for stock-listed companies, and the *German Banking Act* for financial institutions (for further details, see Appendix I).

These two pillars also exist in the Chinese legal environment. The *Securities Law* (证券法, updated in 2020) and the *Interim Measures for the Management of the Credit Rating Industry* (信用评级业管理暂行办法, 2019) are examples of regulations targeting CRAs and the *Administrative Measures for the Disclosure of Information of Listed Companies* (上市公司信息披露管理办法, updated in 2021) for disclosure-related regulations (further details in Appendix I). But in addition to these two aspects, Chinese authorities also address private credit reporting firms directly by establishing dedicated basic rules for the credit reporting sector (*Credit Sector Management Regulation*, 征信业管理条例, 2013), requirements for setting up and operating credit organizations

(*Measures for Managing Credit Organization*, 征信机构管理办法, 2013), as well as supervision and registration procedures for credit reporting firms (*Measures for the Registration of Corporate Credit Reporting Organizations*, 企业征信机构备案管理办法, 2016). The registration processes for other market actors are regulated in the *Regulation on the Administration of the Registration of Market Entities* (市场主体登记管理条例, 2021), which was only enacted in 2022 and requires information on firms, for example, their registration and liquidation, to be published via the NECIPS. Furthermore, Memoranda of Understanding (MoUs) in the context of the SCS prescribe cross-departmental punishments and rewards. These MoUs between different authorities are unique to China's CCR system. They determine cross-departmental sanctions for companies on blacklists that exceed the existing legal consequences for illegal behavior from the authority directly affected by the offense.[2] For instance, the MoU on the Implementation of Joint Punishment against Major Tax Violation Cases (关于对重大税收违法案件当事人实施联合惩戒措施的合作备忘录) stipulates that companies committing major tax violations may suffer from additional punishments, such as lower chances of gaining public contracts or participation in publicly funded projects, denial of licenses, mandatory burdensome government approval requirements for investments in sectors where market access is not usually regulated, etc. (Credit China, 2017).

Third, China's data protection regulation diverges from the United States and Germany in that it omits data protection against the state. Germany's data protection regulation, the *Federal Data Protection Act* (2018), which is based on the EU's *General Data Protection Regulation* (*GDPR,* 2016), is the strictest of the three countries. It applies to all types of organizations, including businesses and state agencies, and also explicitly addresses private credit reporting firms' handling of data. In addition, the fact that an initiative called "OpenSchufa" demands even more stringent data-related regulation for private credit reporting firms emphasizes the importance of this topic in Germany (OpenSchufa, 2020). While US data protection regulation addressing corporate actors is weaker than in Germany (no comprehensive federal data protection law exists), at least some sectors and states possess regulations for consumers' privacy protection, such as the *California Consumer Privacy Act* (2018) (Hoofnagle, 2003). In addition, several laws ensure data protection against the government, such as the *U.S. Privacy Act* (1974, §522a (b) Conditions for disclosure). In contrast, regulatory efforts related to data protection in China target corporations comprehensively but omit data protection against the state. For instance, the *Cybersecurity Law* (网络安全法, 2016) and the *Personal Information Protection Law* (个人信息保护法, 2021) regulate personal data protection by corporations but exempt the state from these rules in cases where national security is concerned (Zhao & Feng, 2021). While in the United States and Germany, the state is also allowed to process data to ensure national security (e.g., when officers need access to data to perform their duties, such as in criminal prosecution) (see *U.S. Privacy Act of 1974, §552a (b)*; *GDPR article 23*), the rule of law and the division of powers (independent judiciary) still ensure that checks and balances are in place to avoid the abuse of these exemptions. These mechanisms only exist to a limited extent in China (scholars often use the term "rule *by* law," e.g., Li, 2017).

4.4. Regulatory environment

The Chinese regulatory environment related to CCR differs from the situations in the United States and Germany in the delineation of regulatory responsibilities and enforcement capacities. In both the United States and Germany, regulators within the respective CCR system have clearly allocated responsibilities. In the United States, the SEC targets CRAs, stock markets, and listed companies, while the Fed and the Federal Financial Institutions Examination Council regulate actors in the financial sector. In addition, the Consumer Financial Protection Bureau, the Federal Trade Commission, and the Office of the Comptroller of the Currency supervise different aspects of private credit reporting firms' operations. Correspondingly, the European Securities and Markets Authority monitors CRAs on the German market, whereas Bafin supervises actors in the financial sector in Germany. Furthermore, the Federal Ministry of Justice and Consumer Protection as well as national and local data protection authorities oversee CCR actors' handling of data in Germany.

In contrast, the regulatory environment in China related to CCR is highly fragmented. Five authorities are concerned with the regulation of credit rating: the PBoC, the NDRC, the China Securities Regulatory Commission (CSRC, 中国证券监督管理委员会), the China Banking and Insurance Regulatory Commission (中国银行保险监督管理委员会), and the Ministry of Finance (中华人民共和国财政部). Only in 2019 did the government delineate the hierarchical relationship between these authorities, yet overlaps in their responsibilities still

exist (PBoC et al., 2019). Similarly, responsibility for the SCS has not been allocated clearly: Discord between the NDRC and the PBoC, the two powerful authorities in charge of the SCS, has essentially led to the set-up of two parallel systems, with Credit China governed by the NDRC and the Credit Reference Center by the PBoC. Moreover, within Credit China's system, regulatory responsibilities are even further dispersed, as local authorities and different government departments and industry associations regulate CCR within their fields of authority (Chen et al., 2018). In combination with the MoUs and their cross-departmental punishments, this leads to extremely complex operations for businesses, even though specific regulatory requirements are often spelled out relatively clearly.

With regard to enforcement capacities, the United States and Germany, with their long-standing legal traditions, both exhibit comparably low corruption levels: In 2020, Transparency International ranked the United States 25th and Germany 9th out of 198 countries on the Corruption Perceptions Index (Transparency International, 2020). In comparison, China only ranked 78th despite a continuous anti-corruption campaign started by Xi Jinping in 2012 (Transparency International, 2020). Besides corruption, the highly fragmented Chinese bureaucratic apparatus often complicates effective decisionmaking, and short-staffed Chinese courts have difficulty enforcing decisions (Mertha, 2009; Van Rooij, 2012; Van Rooij, 2016). Therefore, the Chinese government often resorts to campaigns to enforce specific rules rather than relying on consistent supervision (China Law Translate, 2019; Van Rooij, 2016).

4.5. Use of information

In both the United States and Germany, the use of corporate credit information is commonplace for companies to mitigate information asymmetries. Businesses use corporate credit reports in their risk evaluation processes, and financial institutions and intermediaries build their risk assessments on credit information. In addition, the governments make use of credit information for legal enforcement, most commonly requiring a minimum rating threshold as a prerequisite for administrative procedures (e.g., provision of licenses). In both countries, however, the respective government has reduced the reliance on credit ratings for regulatory purposes, as the global financial crisis was at least partly attributed to the shortcomings of CRAs in reflecting the actual risks of businesses (Duan & van Laere, 2012; Kruck, 2016).

While the comparatively short history of credit reporting makes the use of corporate credit information a rather new phenomenon in China, businesses, financial institutions, and intermediaries nevertheless use credit information as a mechanism to mitigate information asymmetries in a similar manner as in the United States and Germany. In line with the other two countries, credit rating thresholds are set by the Chinese state for the access to certain business fields and services, for example, the eligibility and procedures of bond issuance (*ex-ante approval*) (Jiang & Packer, 2017).

However, the Chinese government extends the use of credit information beyond these application areas to *enforcement ex-post*: Companies not only face legally mandated sanctions for breaking the law but are also subject to supplementary punishments via the SCS. These punishments span departments in the form of MoUs and even link consequences for businesses with those for their legal representatives in a unique way: While in Germany and the US legal representatives' liability remains within the financial realm, in China, it is extended to other fields. For example, the CEO of a blacklisted company faces exclusion from flights, high-speed trains, and luxury consumption (Schaefer & Yin, 2019).

4.6. Transparency

4.6.1. Disclosure

Chinese CCR platforms' disclosure levels are reversed compared to those in the United States and Germany. In both the United States and Germany, the disclosure level on the public platforms (EDGAR[3] and Bundesanzeiger) is high, whereas the private platforms (D&B and Schufa) exhibit a much lower level of disclosure. This is reflected in both the platforms' information levels and accessibility. Public platforms disclose larger amounts of information compared to private ones (Table 1). Specifically, public platforms not only provide legally mandatory information about listed firms but also contain company-issued documents, such as annual reports (Table 1). Often, companies disclose information far beyond legal requirements. In contrast, private platforms process information

Table 1 Excerpt from the sections "stock market information" and "annual reports" of the transparency case study (full table: Appendix II)

	US company		German company		Chinese SOE		Chinese POE	
	EDGAR	D&B	Bundesanzeiger	Schufa	Credit China	Qichacha	Credit China	Qichacha
Stock market information								
Stock code			f			f		f
Stock short name	f	f/p	f			f		f
Former names in stock market						f		f
Listed stock market	f	p	f			f		f
Accounting firm hired	f		f			f		f
Listing date	f					f		f
Dividends per share	f		f					
Market value			f			f		f
Stock value change			f			f		f
P/B ratio						f		f
P/E ratio						f		f
Annual reports								
Original annual report	f		f					
Income statement	f	f/p	f			f		f
Balance sheet	f	p	f	p		f		f
Cash flow statement	f	p	f			f		f
Fiscal year	f	f	f					

Index: f: information free of charge; p: paid information; f/p: basic information free of charge, additional paid information; empty field: no information available on the platform. D&B, Dun & Bradstreet; POE, privately owned enterprise; SOE, state-owned enterprise.

and disclose the information in the reports in a standardized way with fixed categories, which limits the amount of information disclosed. However, the private platforms provide one feature that public platforms lack: their own assessments, such as company credit scores (Table 2). With regard to information accessibility, public platforms in the United States and Germany have advantages compared to their private counterparts. The content on the public platforms is provided free of charge and without login. In contrast, (comprehensive) information on private platforms is only available to paying customers. For instance, accessibility to D&B is geographically limited to customers with a US/Canadian address and phone number. Similarly, accessing Schufa's company credit reports requires a complicated and time-consuming registration process on the website: The registration code is sent via postal mail, and the registrant needs to provide national ID card information, as well as confirmation of a justified interest in retrieving the information. Moreover, Schufa and D&B users both need to pay fees for the credit reports. Schufa even requires users to acquire an annual pass during customer registration before reports can be purchased.

The Chinese CCR platforms' disclosure levels are the opposite to those in the United States and Germany: The public platform Credit China rates comparably low on disclosure, whereas the private platform Qichacha shows a high level of disclosure. The distinctiveness of the Chinese case is mainly caused by the amount of information disclosed on the public and private Chinese platforms, which contrasts starkly with the other two countries (Table 1). Credit China offers the least amount of information among the sample platforms, while Qichacha discloses the most information overall (Appendix II). Qichacha collects companies' data from various sources and creates "new" information using big data and artificial intelligence, such as assessments of media attitudes (Table 2). Like its counterparts in the other two countries, Qichacha provides risk assessments, but not in the form of scores. Furthermore, Qichacha focuses more on information related to legal and regulatory compliance than the US and German platforms, for example, by publishing blacklists as well as scores from certain state agencies (Table 2). Credit China, on the other hand, exclusively focuses on compliance-related information and is

Table 2 Excerpt from the sections "social credit-related information" and "risks" of the transparency case study (full table: Appendix II)

	US company		German company		Chinese SOE		Chinese POE	
	EDGAR	D&B	Bundesanzeiger	Schufa	Credit China	Qichacha	Credit China	Qichacha
Social credit-related information								
Honorary title/awards			f		f	f	f	f
Blacklist entry					f		f	
Risks								
Risks the company is facing	f		f			f		f
Risks the company discloses								
- Number of lawsuits	f	p	f			f		f
- Details on lawsuits	f	p	f			p		p
Alarm information	f					p		p
Sensitive media information						f/p		f/p
Country/regional risks		p						
Risks from associated companies		p	f			p		p
Credit score		p	f	p		f		
Information about payment defaults		p		p				

Index: f: information free of charge; p: paid information; f/p: basic information free of charge, additional paid information; empty field: no information available on the platform. D&B, Dun & Bradstreet; POE, privately owned enterprise; SOE, state-owned enterprise.

the only platform that largely omits financial information. It therefore ranks low on disclosure levels (Tables 1 and 2).

This major difference in disclosure levels between the Chinese platforms and those in the United States and Germany is not mitigated by the fact that information accessibility on Chinese platforms is manifested in a similar manner as in the other two countries. Users can inquire about different companies' records and download the information for free and without registration from Credit China. Qichacha, on the other hand, provides most information only after registration. Users can either register with a phone number or use a Chinese social media account. After registration, Qichacha provides a larger amount of information for free compared to D&B and Schufa. Still, only the purchase of a fee-based annual pass, which is only possible via the mobile payment facilities of Alipay (阿里支付宝) and WeChat (微信), provides additional features and thereby slightly curtails accessibility.

4.6.2. Clarity

The public and private Chinese platforms both exhibit information with a high level of clarity, whereas in the United States and Germany, private platforms provide a higher level of clarity than public platforms. In the United States and Germany, information on private platforms (D&B and Schufa) is well-structured in standard categories, with tables and color-coded credit scores allowing a quick overview of the company (Appendix III, Figs. 1 and 3). However, clarity is curtailed by the low transparency about the algorithm used for calculating credit scores. Notably, public platforms exhibit an even lower level of clarity because all information is provided in running text. For this reason, it can be hard to retrieve specific information quickly, especially since some documents (e.g., annual reports) are not restricted in length (Appendix III, Fig. 2). This is only slightly mitigated by the fact that the most relevant information is generally shared at the beginning of the annual reports (Appendix III, Fig. 4). In contrast, in China, both Credit China and Qichacha present information clearly by using structured and concise templates, where credit information is presented in tables under separate fixed

categories (Appendix III, Figs. 5 and 6). In addition, Qichacha uses graphs to visualize information like owner-ship structures, which increases information clarity. Moreover, the authorities responsible for public scores provided on Credit China provide details on how these scores are generated. For instance, a company can find detailed descriptions of which behavior leads to the addition or subtraction of points in the related regulatory documents (e.g., CSRC, 2017).

4.6.3. Accuracy

Private platforms in all three countries only achieve medium to low levels of accuracy, as information inaccuracy has been reported as a problem for D&B, Schufa, and Qichacha. Media outlets in all three countries have reported complaints by parties regarding inaccurate information. For instance, between 2010 and 2013 alone, the Federal Trade Commission received 551 complaints against D&B, and in 2014, D&B was accused of orchestrating a scheme to falsify credit reports to the disadvantage of small businesses (GlobeNewswire, 2014; The Wall Street Journal, 2013). As for Schufa, a study in 2009 revealed that 45% of its credit reports about individuals contained errors, which also evoked doubts about the accuracy of their data for companies (Korczak et al., 2009). Likewise, there have been media reports documenting false company information on private CCR platforms in China, including Qichacha (e.g., Sina Finance, 2020). Yet, all three private platforms also possess at least one feature con-ducive to accuracy, which partly mitigates the negative image. Both D&B and Schufa allow companies to correct errors on their credit reports to mitigate the impact of errors. Qichacha, on the other hand, provides details on key data sources and conducts frequent information updates.

Similarly, public platforms from all three countries reveal shortcomings with regard to accuracy, with Credit China's accuracy problems being the biggest. In the United States and Germany, examples such as the Lehman Brothers' bankruptcy in 2008 and the Wirecard scandal in 2020 point to the existence of loopholes in CCR on public platforms (Adu-Gyamfi, 2015; Zingales, 2008). In addition, it is a common phenomenon in Germany that companies fail to report information on time: A study found that only 11% of the companies examined provided their annual reports for 2018 within the six-month deadline (Stiftung Warentest, 2020). Yet, the public platforms in the United States and Germany, EDGAR and Bundesanzeiger, possess features conducive to accuracy. For example, both platforms provide publication dates for information. EDGAR also explicitly states it has mecha-nisms to amend missing/inaccurate information (e.g., form 10-K/A). It announces missing disclosures and pro-vides lists of untrustworthy companies, that is, firms that falsely claim to be registered, licensed, and/or located in the United States. Another factor contributing to accuracy in both the United States and Germany is the fact that accounting firms provide their judgment on the accuracy of reports, while yet another government authority (SEC or Bafin) monitors disclosure and conducts spot checks. Therefore, accuracy on public platforms in the United States and Germany is on a medium level overall.

Due to some additional shortcomings, Credit China's accuracy levels are rated medium to low. The main rea-son for this evaluation is the fact that a great deal of negative information about listed companies may not even be disclosed on the platform. Research suggests that more than 60% of Chinese listed companies' litigation cases are missing in court disclosures, and thus automatically on Credit China,[4] for political reasons (Liu et al., 2019). Information seems to be purposefully biased, which, in combination with a lack of checks and balances within the political system, implies serious neglect of information accuracy. Even the fact that the platform includes data sources for its entries and that the website contains a complaint function for companies to report wrongly dis-played information cannot make up for these shortcomings in accuracy.

5. Discussion

The above comparison has identified substantial similarities between the United States and German CCR systems: They both developed bottom-up, have a longstanding tradition of building trust in the economic realm, and apply a narrow concept of credit today. Moreover, their legal frameworks are mature, and responsibilities are clearly distributed among authorities with rather strong enforcement capacities. Lastly, in both systems, the CCR platforms generally exhibit similar levels of transparency.

Yet, divergences between the United States and the German CCR systems also exist. The biggest difference is related to the stronger role of the state in the German CCR model as compared to the US system with its focus

on private actors. In addition, some subtler discrepancies between the two countries prevail: Data protection receives a stronger emphasis in the German CCR system as compared to the United States. Furthermore, disclosure levels on private platforms are slightly higher in the United States than in Germany.

In contrast, the similarities between the Chinese CCR system and those in the United States and Germany are limited to the fundamental characteristics of CCR. The differences predominate, with four main aspects highlighting the Chinese CCR system's distinctiveness. First, the influence of the state in the Chinese CCR system is significantly stronger than in the United States and Germany. The Chinese case is the only one among the three in which the impetus for setting up a CCR system came from the government. Its implementation has also been dominated by the state. The government has, for instance, stressed data sharing and integration across government departments and regions in the context of the SCS set-up (State Council China, 2014). Furthermore, the Chinese government has already established registration mechanisms for both CRAs and private credit reporting firms and is currently drafting a Social Credit Law. Such a law will confirm the strategic importance of and the Chinese government's control over this system. Another example of the more dominant role of the Chinese state in the CCR system relates to the difference in the concept of credit. While, originally, credit reporting in the United States and Germany also possessed an explicit moral and educational notion, that meaning of credit, just as today's narrow understanding of it, developed in an emergent bottom-up process, in which the government reacted to business initiatives. In China, in contrast, the government holds the prerogative of interpreting the meaning of credit and its recent expansion. This implies that the Chinese government attempts to proactively define the substance of trust and the mechanisms of how it is built in the corporate sector.

Second, the Chinese government extends the legal enforcement function of CCR to enforcement ex-post. In the United States and Germany, the CCR systems' corporate credit ratings and scores are utilized only for ex-ante approval, that is, by making these credit evaluations prerequisites in certain administrative procedures. In China, similar ex-ante approval mechanisms exist, but they are complemented by enforcement mechanisms *ex post* via MoUs. Such an enhanced punishment system via MoUs linked to the CCR system only exists in China.

Third, the information infrastructure in China's CCR system exhibits a higher degree of centralization than in the United States and Germany. While private actors also constitute a part of the CCR system and, indeed, play important roles in it, the government ultimately controls the overall CCR information infrastructure by setting up the central governmental credit databases. Private companies involved in credit reporting are intricately linked to government authorities, be it via state-ownership in CRAs or state-enforced initiatives, such as Baihang Credit. In contrast, in the United States and Germany, companies involved in credit reporting are privately owned and thus more independent from the state. In essence, the Chinese state claims and exerts sovereignty over data and information and thus steers actors within its CCR system. This centralization in the government's hands seems especially problematic since data protection against the state is not addressed in Chinese regulations. Another example of this difference is related to the credit correction mechanisms in the three countries. In the United States and Germany, companies submit certain corporate information to the platforms. In case authorities detect errors, companies need to correct these mistakes. Moreover, companies decide which information to share with the public beyond legal requirements. Contrarily, in China, it is not the company but the state that upholds the right to decide what, when, and how information reported to them by companies is disclosed on the platforms. The firms, then, are in charge of detecting mistakes in published data via a data correction application.

Fourth, the Chinese CCR system possesses reversed levels of transparency between private and public platforms in comparison with those in the United States and Germany, especially regarding disclosure (Table 3). On the one hand, the Chinese private platform shows a significantly higher level of disclosure than its counterparts in the United States and Germany. Given the previously rather opaque business environment in China, provision of great amounts of corporate information seems reasonable for lowering transaction costs: The centralized public SCS databases and new technologies contribute to an increase in transparency at relatively low costs. In comparison, in the United States and Germany, with their rule of law and high levels of trust in the legal system, such large amounts of corporate information may not be necessary for smooth business transactions. Transparency levels like those in China may not even be desired by the actors involved in CCR in these countries, because high levels of disclosure can also harm businesses (e.g., risk of publishing company secrets). On the other hand, the public platform in China is the least transparent of all the platforms and does not even contain standard corporate credit information, as generally provided in annual reports. Instead, Credit China emphasizes legal

Table 3 Differences in levels of transparency by dimension, platform, and country

Public platform Private platform	United States	Germany	China
Disclosure	High†	High	Low
	Medium	Low	High
Clarity	Low	Low	High
	High	High	High
Accuracy	Medium	Medium	Medium to low
	Medium to low	Medium to low	Medium to low

†The high level of disclosure only refers to the information provided on companies that are included on the platform itself. However, it has to be noted that the scope of companies included on the platform is smaller (only listed firms) compared to the other two platforms.

enforcement.[5] In addition, another unique characteristic of the Chinese CCR system's disclosure of information is related to its public scoring mechanisms. In the United States and Germany, only private actors provide scores. The algorithms for computing them are company secrets. This is also the case for private CCR actors in China. However, the calculation logic of scores provided by Chinese public actors is often transparent. In sum, these reversed levels of transparency and the different foci of the private and public CCR platforms are indicative of a different state–business relationship. While in the United States and Germany the public and private CCR actors have a somewhat competitive relationship, these actors complement each other in China. In addition, the differences highlight that businesses operating in China need to adopt other approaches related to CCR and transparency compared to the United States and Germany.

6. Conclusion

The Chinese institutional set-up with its idiosyncrasies described above hints at a distinct form of economic trust-building, a CCR system with Chinese characteristics. While the governments in the United States and Germany take a backseat and focus on providing an environment in which trust among corporate actors can develop from the bottom up, the Chinese government follows a more proactive approach. With its centralized information infrastructure and extension of the CCR's legal enforcement function, the Chinese government intervenes in trust-building in the corporate sector in a top-down fashion. The burgeoning market for private CCR actors is supposed to complement this top-down set-up with bottom-up innovation and concrete benefits for businesses. In addition, technology plays a large role in this new trust-building mechanism: The SCS, a key CCR pillar emphasizing the use of data and future technologies such as artificial intelligence for governance (State Council China, 2014), is part of the Chinese government's larger "Internet Plus" strategy, which attempts to solve a broad range of regulatory problems with the help of information technologies (State Council China, 2015).

This approach goes beyond the bifurcated nature of the Chinese regulatory regime, as described by previous academic literature. The Chinese development in the CCR realm, in fact, suggests a specific regulatory mode that combines the two approaches laid out by Hsueh (2011) and McNally (2012) in one approach across industries. In this regulatory mode, the state simultaneously retains central control and steers in a regulatory state-like fashion through the adoption of new technologies. In addition, the state instrumentalizes market mechanisms (e.g., competition via scores), where necessary, to achieve its goals.

This new regulatory mode directly affects companies operating in China. Specifically, it may shrink the gap between the treatment of SOEs versus POEs in China by, on the one hand, subjecting SOEs to existing business regulations more strictly (i.e., with fewer exceptions) and, on the other, by exerting a stronger educational influence on—national and international—POEs to comply with regulations and support state interests. As a result, companies need to adopt different approaches with regard to economic trust-building and credit reporting in China as compared to other countries, for instance in their relationship management with supply chain partners and information management.

Ultimately, the new way of building economic trust via the CCR system has the potential to reduce transaction costs in the Chinese economy and thereby contribute to the maintenance of comparatively high economic growth rates. The new institutional and regulatory approach can be interpreted as compensation for the lack of a rule of law and related institutions for economic trust-building that modern high-income countries possess and that the Chinese government intends to implement in a developmental, state-like fashion. As such, this new regulatory mode exercised by the Chinese government serves as a means to avoid the middle-income trap and catch up with high-income countries by circumventing the lengthy process of organic institution building for trust-enhancement in modern market economies from the bottom up. If successful, this new regulatory mode may not only find imitators internationally, for example, countries in the Global South with similar institutional endowments and economic ambitions, but also affect global regulatory standards and economic governance in the long run.

Acknowledgments

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

[1]   During the revision of this paper (April 2022), the NECIPS was accessible from outside China again. While a comparison of the information provided on the NECIPS and Credit China showed that the type and amounts of information available on the two platforms differ, this check also illustrated that the divergence between the two platforms is not decisive (contact the authors for further information) and thus does not significantly change the findings of the analysis and the paper's line of argumentation. Therefore, the authors decided to stick with the data collected originally. Future research may consider examining the NECIPS in more detail.

[2]   The same logic is adopted for praiseworthy behavior, that is, rewards for companies that are red-listed.

[3]   Since EDGAR only provides information on listed companies, as described in Section 4.2, this statement only applies to listed companies, whereas the levels of transparency for the German and Chinese public platforms pertain to all registered companies.

[4]   Information on Credit China is based on data disclosed by courts to a large extent, for example, information on blacklist entries.

[5]   The same applies to the NECIPS: Even though the NECIPS provides slightly more standard corporate credit information, the amount of information is still significantly lower as compared to EDGAR and Bundesanzeiger, the public platforms in the United States and Germany. Instead, the NECIPS, as Credit China, provides a wide range of information related to legal enforcement, for example, blacklist entries, inspection information (including results).

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Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1 Legal disclosure requirements for listed companies in the United States, Germany, and China in comparison.

Appendix S2 Conceptual framework for the transparency case study, results shown for the secondary sector (automotive).

Appendix S3 Screenshots of exemplary information provided in the chosen CCR platforms' corporate credit reports.
Figure 1. Sample report from Dun & Bradstreet (https://www.dnb.com/products/small-business/business-information-report-snapshot.html, accessed 01.09.2020).
Figure 2. Anonymized report from EDGAR (company search via https://www.sec.gov/edgar/searchedgar/companysearch.html on 01.09.2020).
Figure 3. Sample report from Schufa (https://www.schufa-unternehmensauskunft.de/schufa-unternehmensauskunft-was-sie-bietet.html, accessed 01.09.2020).
Figure 4. Anonymized report from the Bundesanzeiger (company search via https://www.bundesanzeiger.de/ on 01.09.2020).
Figure 5. Anonymized report from Qichacha (company search via https://www.qcc.com/ on 01.09.2020).
Figure 6. Anonymized report from Credit China (company search via www.creditchina.gov.cn on 01.09.2020).